



MEANINGFUL MENTORSHIP ASSOCIATED WITH REWARDING SHORT-TERM RESEARCH: RESULTS FROM AN EVALUATION OF ISPOR STUDENT EXPERIENCES

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Introduction

Results from the 2013 International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Student Member Internship Survey suggested that many students felt unprepared to manage multiple projects and present to leadership.

During the Fall of 2016, the ISPOR Student Network Survey and Evaluation Committee conducted a survey among student members, aiming to describe recent internship experiences and identify key facilitators for success.

Our objective was to

1. Describe ISPOR’s student members’ internships, summer experiences, and other short-term graduate student research projects
2. Identify common facilitators and barriers for a successful internship

Methods

- An online, mixed-methods survey was developed and distributed to student members with the goal of evaluating internship/short-term research experiences.
- Logistic regression models evaluated associations between student and internship attributes and outcomes (Table 1).
- Two committee members independently identified themes in qualitative responses.

Table 1. Variables used in regression analysis

Variable Type	Variable Name	Coding	Definition
Attributes as Independent Variables	<i>duration</i>	Numerical	Number of weeks of working experience
	<i>gender</i>	Binary	Male or female
	<i>learn</i>	Categorical	Learned about opportunity through: recommendation, network, peers, internet
	<i>interest</i>	Binary	Strongly agreed it was related to my research interest
	<i>bestmentor</i>	Binary	Strongly agreed they provided meaningful mentorship
	<i>scope</i>	Dummy variables	Scope of responsibilities included pricing, outcomes, market access, policy, or global health
Outcomes as Dependent Variables	<i>employer</i>	Dummy variables	Employer: pharmaceutical company, academic institution, regulatory, consulting, government, professional, non-profit
	<i>strengthen</i>	Binary	Strongly agreed it challenged my strengths and skills
	<i>expectations</i>	Binary	Strongly agreed fulfilled my expectations
	<i>rewarding</i>	Binary	Strongly agreed it was personally rewarding
	<i>publication</i>	Binary	Strongly agreed it may lead to a publication or contribute to a report
	<i>job</i>	Binary	Strongly agreed it made me a more competitive job applicant

Results

The ISPOR Survey and Evaluation Committee collected 32 complete survey responses from October 2016 through December 2016.

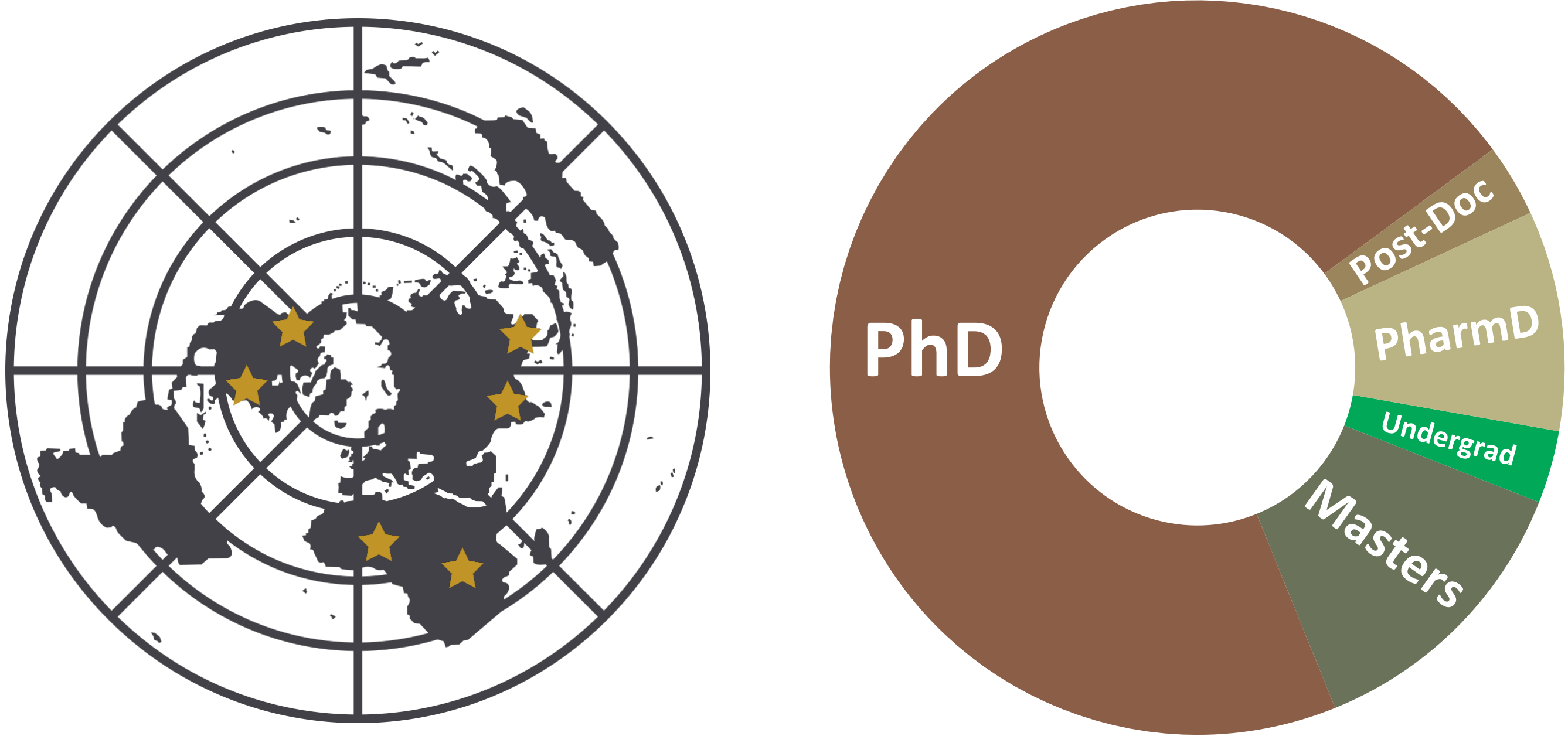


Figure 1. Respondent locations and degree program types

Degree program (Figure 1), gender (Table 2), employer type (Figure 2), and scope of responsibilities (Figure 3) were not significantly associated with a personally rewarding or strengthening experience in the regression analyses.

Table 2. Characteristics of students responding to internship survey

Responses (n = 32)	
Female	48%
Age	22-40 years
Within United States	81%
Internship Duration	Mean 13 weeks (Range: 4-52 weeks)



Figure 2. Most Common Employer Settings

Results (Continued)

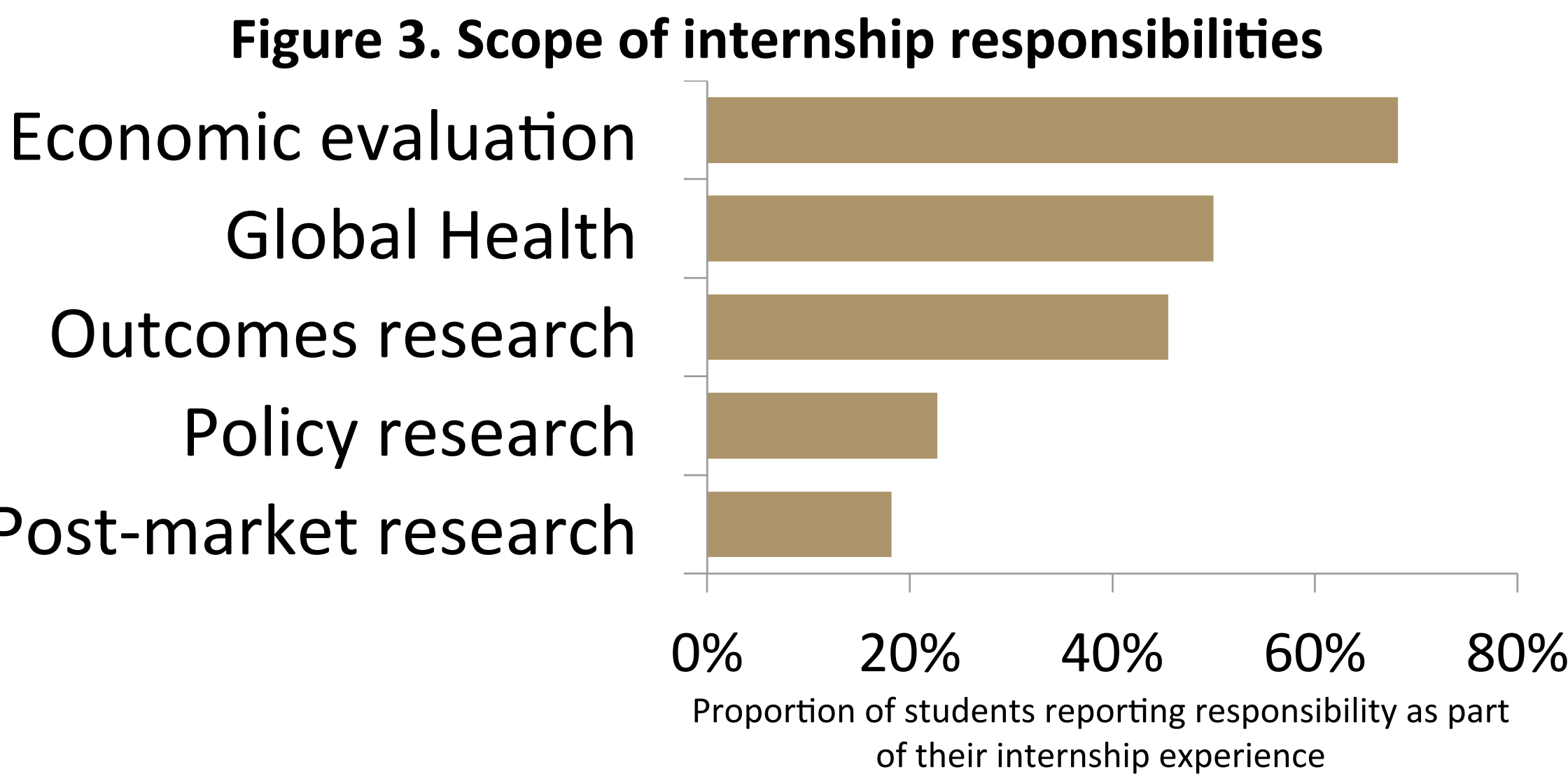


Figure 4. ISPOR student members Daniel Simmons (left) and Simrun Grewal (right) gaining experience during summer internships.

Table 3. Selection of regression models

Model	Odds Ratio	95% Confidence Interval	Interpretation
$\text{logit}(\text{publication}) = \beta_1 + \beta_2 \text{duration}$	1.2	1.0 – 1.7	An additional week of work increased the likelihood of publication by 20%, however this was not a statistically significant result (p = .24)
$\text{logit}(\text{strengthen}) = \beta_1 + \beta_2 \text{bestmentor}$	8.3*	1.2 - 85.8	Meaningfully mentored students were 8 times more likely to strongly agree their skills were challenged and strengthened (p = 0.05)
$\text{logit}(\text{rewarding}) = \beta_1 + \beta_2 \text{bestmentor}$	33.0*	3.4 – 858.6	Meaningfully mentored students were 33 times more likely to have a personally rewarding experience (p < 0.01)

*Significance of p < 0.05

Two major facilitating themes emerged from analysis of the qualitative responses:

mentorship and networking.

Qualitative themes, as captured by student quotes in Table 4, were consistent with the statistical analysis of quantitative responses (Table 3). A common **barrier to positive outcomes was too short of duration**; however longer internships were not significantly associated with contribution to a publication (p=0.2).

Table 4. Student quotes reflecting themes identified in qualitative analysis

THE BEST PARTS	THE WORST PARTS
<i>“A trip to Mongolia with UNDP and the WHO to conduct an economic evaluation of health policy interventions.”</i>	<i>“The time was too short.”</i>
<i>“I got to work on an amazing study. I felt like I was part of the team and could make meaningful contributions.”</i>	<i>“I felt like I was failing their expectations the entire time.”</i>
<i>“Networking.”</i>	<i>“Dealing with bureaucracy.”</i>

Limitations

- Low response rate → small sample size for subgroup comparisons
- Potential selection bias → respondees may not be representative of all students who participated in short-term research experiences.

Conclusion

- Meaningful mentoring was the most important factor contributing to a personally rewarding internship that challenged and strengthened skills.
- Results of this study can assist employers to understand the range of opportunities available to ISPOR students and the factors that cultivate a positive experience.

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